

in which:

R₁, R₂ and R₃, which may be identical or different, are each chosen from a hydrogen atom; a halogen atom; a group Z; a (C₁-C₆ alkyl)carbonyl radical; an amino(C₁-C₆ alkyl)carbonyl radical; an N-Z-amino(C₁-C₆ alkyl)carbonyl radical; an N-(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical; an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical; an amino(C₁-C₆ alkyl)carbonyl(C₁-C₆ alkyl) radical; an N-Z-amino(C₁-C₆ alkyl)carbonyl(C₁-C₆ alkyl) radical; an N-(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl(C₁-C₆ alkyl) radical; an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl(C₁-C₆ alkyl) radical; a carboxyl radical; a (C₁-C₆ alkyl)carboxyl radical; a (C₁-C₆ alkyl)sulphonyl radical; an aminosulphonyl radical; an N-Z-aminosulphonyl radical; an N-(C₁-C₆ alkyl)aminosulphonyl radical; an N,N-di(C₁-C₆ alkyl)aminosulphonyl radical; an aminosulphonyl(C₁-C₆ alkyl) radical; an N-Z-aminosulphonyl(C₁-C₆ alkyl) radical; an N-(C₁-C₆ alkyl)aminosulphonyl(C₁-C₆ alkyl) radical; an N,N-di(C₁-C₆ alkyl)aminosulphonyl(C₁-C₆ alkyl) radical; a carbamyl radical; an N-(C₁-C₆ alkyl)carbamyl radical; an N,N-di(C₁-C₆ alkyl)carbamyl radical; a carbamyl(C₁-C₆ alkyl) radical; an N-(C₁-C₆ alkyl)carbamyl(C₁-C₆ alkyl) radical; an N,N-di(C₁-C₆ alkyl)carbamyl(C₁-C₆ alkyl) radical; a C₁-C₆ alkyl radical; a hydroxyl radical; a nitro radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; a C₁-C₆ trifluoroalkyl radical; a cyano radical; a group OR₆; a

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group SR₆; an amino radical; an N-(C₁-C₆ alkyl)amino radical; an N,N-di(C₁-C₆ alkyl)amino radical, wherein the two alkyl substituents may form a ring chosen from 5- and 6-membered rings; an N-hydroxy(C₁-C₆ alkyl)amino radical; an N,N-bis(hydroxy(C₁-C₆ alkyl))amino radical; an N-polyhydroxy(C₂-C₆ alkyl)amino radical; an N,N-bis(polyhydroxy(C₂-C₆ alkyl))amino radical; an amino(C₁-C₆ alkyl)amino radical, in which the terminal amino group is unsubstituted or substituted by one or two C₁-C₆ alkyl radicals, where the alkyl radicals may form a ring chosen from saturated and unsaturated 5- and 6-membered rings; an amino group protected by at least one group chosen from a (C₁-C₆ alkyl)carbonyl, a trifluoro(C₁-C₆ alkyl)carbonyl, an amino(C₁-C₆ alkyl)carbonyl, an N-Z-amino(C₁-C₆ alkyl)carbonyl, an N-(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl, an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical, an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl) formyl radical; and a group Z;

R₆ is chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a group Z; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a C₁-C₆ aminosulphonylalkyl radical; a C₁-C₆ N-Z-aminosulphonylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)aminosulphonylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)aminosulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphanylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carbonylalkyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical whose amine is substituted by one or two radicals chosen from C₁-C₆ alkyl, monohydroxy(C₁-C₆ alkyl), polyhydroxy(C₂-C₆ alkyl),

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(C₁-C₆ alkyl)carbonyl, formyl, trifluoro(C₁-C₆ alkyl)carbonyl, and (C₁-C₆ alkyl)sulphonyl radicals, and a group Z;

A is chosen from -NR₄R₅ and a hydroxyl radical;

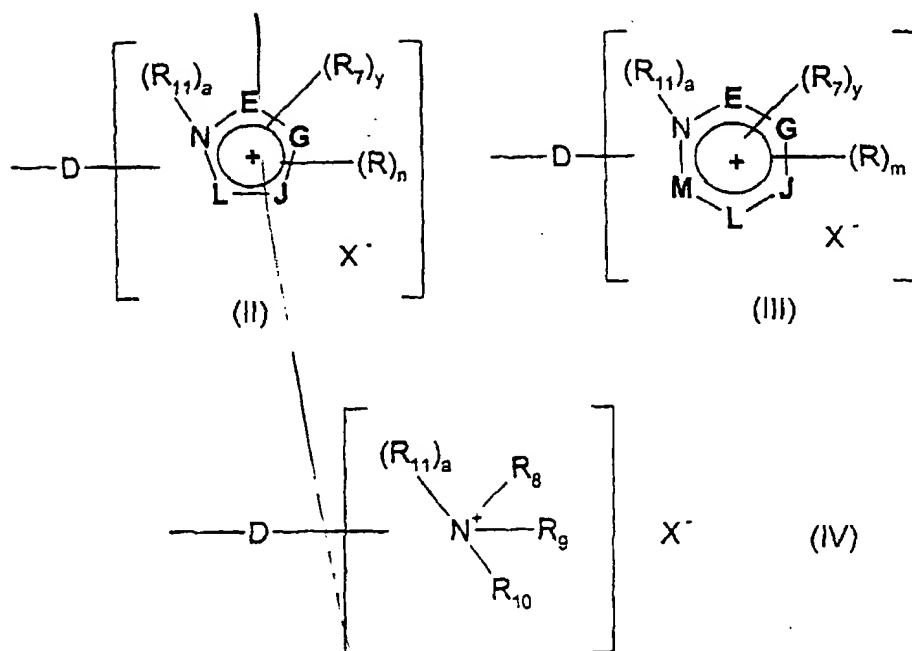
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R₄ and R₅, are independently chosen from a hydrogen atom; a group Z; a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ thiocarbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a C₁-C₆ sulphoalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphanylalkyl radical; a C₁-C₆ aminosulphonylalkyl radical; a C₁-C₆ N-Z-aminosulphonylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)-aminosulphonylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)aminosulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carbonylalkyl radical; a C₁-C₆ aminoalkyl radical a C₁-C₆ aminoalkyl radical whose amine is substituted by one or two radicals chosen from C₁-C₆ alkyl, C₁-C₆ monohydroxyalkyl, C₂-C₆ polyhydroxyalkyl, (C₁-C₆ alkyl)carbonyl, (C₁-alkyl)sulphonyl, formyl, and trifluoro(C₁-C₆ alkyl)carbonyl radicals, and a group Z;

wherein one and only one of the radicals R₄ and R₅ may also be chosen from a (C₁-C₆ alkyl)carbonyl radical; a formyl radical; a trifluoro(C₁-C₆ alkyl)carbonyl radical; an amino(C₁-C₆ alkyl)carbonyl radical; an N-Z-amino(C₁-C₆ alkyl)carbonyl radical; an N-(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical; and an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical;

Z is chosen from the unsaturated cationic groups of formulae (II) and (III) below and the saturated cationic groups of formula (IV) below:

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in which:

D is a linker which is chosen from linear and branched alkyl chains and may be interrupted by at least one heteroatom atom and may be substituted by at least one of a hydroxyl and a C₁-C₆ alkoxy radical, and may carry at least one ketone function;

the ring members E, G, J, L and M, which are identical or different, are chosen from carbon, oxygen, sulphur and nitrogen atoms;

n is an integer ranging from 0 to 4;

m is an integer ranging from 0 to 5;

the radicals R, which are identical or different, may be chosen from a group Z; a halogen atom; a hydroxyl radical; a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a nitro radical; a cyano radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ alkoxy radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; an amido radical; an aldehydo radical; a carboxyl radical; a C₁-C₆ alkylcarbonyl radical; a

thio radical; a C₁-C₆ thioalkyl radical; a (C₁-C₆ alkyl)thio radical; an amino radical; an amino radical protected by a group chosen from (C₁-C₆ alkyl)carbonyl, carbamyl, and (C₁-C₆ alkyl)sulphonyl; and groups NHR" and NR"R'" in which R" and R'", which are identical or different, are chosen from a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical and a C₂-C₆ polyhydroxyalkyl radical;

A) R₇ is chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; a carbamyl(C₁-C₆ alkyl) radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a benzyl radical; and a group Z;

R₈, R₉ and R₁₀, which are identical or different, are chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; a C₁-C₆ cyanoalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ amidoalkyl radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; and a C₁-C₆ aminoalkyl radical whose amine is protected by at least one of a (C₁-C₆ alkyl)carbonyl, amido, carboxyl and (C₁-C₆ alkyl)sulphonyl radical;

two of the radicals R₈, R₉ and R₁₀ may form, together with the nitrogen to which they are attached, a ring chosen from saturated 5- and 6-membered carbon-containing rings which may contain at least one heteroatom, wherein said rings may contain a substituent chosen from a halogen atom; a hydroxyl radical; a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a nitro radical; a cyano radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ alkoxy radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; an amido radical; an aldehydo radical; a carboxyl radical; a C₁-C₆ ketoalkyl radical; a thio radical; a C₁-C₆ thioalkyl radical; a (C₁-C₆ alkyl)thio radical; an

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amino radical; and an amino radical protected by a group chosen from (C₁-C₆ alkyl)carbonyl; carbamyl and (C₁-C₆ alkyl)sulphonyl radical;

one of the radicals R₈, R₉ and R₁₀ may be chosen from a second group Z, identical to or different from the first group Z;

R₁₁ may be chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical whose amine is protected by at least one of a (C₁-C₆ alkyl)carbonyl, a carbamyl, and a (C₁-C₆ alkyl)sulphonyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; a C₁-C₆ sulphonamidoalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphinyllalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)ketoalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)carbamylalkyl radical; and a C₁-C₆ N-(C₁-C₆ alkyl)sulphonamidoalkyl radical;

a and y are integers equal to 0 or 1; with the following conditions:

- in the unsaturated cationic groups of formula (II):
 - when a = 0, the linker D is attached to the nitrogen atom,
 - when a = 1, the linker D is attached to one of the ring members E, G, J or L,
 - y can adopt the value 1 only
 - 1) when the ring members E, G, J and L are simultaneously a carbon atom and when the radical R₇ is carried by the nitrogen atom of the unsaturated ring; or

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2) when at least one of the ring members E, G, J and L is C chosen from a nitrogen atom to which the radical R_7 is attached;

- in the unsaturated cationic groups of formula (III):

- when $a = 0$, the linker D is attached to the nitrogen atom,
- when $a = 1$, the linker D is attached to one of the ring members E, G, J, L or M,
- y can adopt the value 1 only

1) when at least one of the ring members E, G, J, L and M is chosen from a divalent atom and

2) when the radical R_7 is carried by the nitrogen atom of the unsaturated ring;

- in the saturated cationic groups of formula (IV):

- when $a = 0$, then the linker D is attached to the nitrogen atom which carries the radicals R_8 to R_{10} ,
- when $a = 1$, then two of the radicals R_8 to R_{10} , together with the nitrogen atom to which they are attached, form a ring chosen from 5- and 6-membered saturated rings, and the linker D is carried by a carbon atom of the said ring;

X^- is chosen from monovalent and divalent anions;

with the proviso that the number of cationic groups Z in said compound of formula (I) is at least one.

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B'

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24. At least one chemical according to Claim 23, wherein in said formulas (II), (III), and (IV), D is chosen from linear and branched alkyl chains having from 1 to 14 carbon atoms.

25. At least one chemical according to Claim 24, wherein said alkyl chains are interrupted by at least one heteroatom chosen from oxygen, sulphur, and nitrogen atoms.

26. At least one chemical according to Claim 23, wherein the rings of the unsaturated group Z of formula (II) are chosen from pyrrole, imidazole, pyrazole, oxazole, thiazole and triazole rings.

27. At least one chemical according to Claim 23, wherein the rings of the unsaturated group Z of formula (III) are chosen from pyridine, pyrimidine, pyrazine, oxazine and triazine rings.

28. At least one chemical according to Claim 23, wherein two of the radicals R_8 , R_9 and R_{10} in said saturated group Z of formula (IV) form a ring chosen from a pyrrolidine ring, a piperidine ring, a piperazine ring and a morpholine ring.

29. At least one chemical according to Claim 23, wherein X^- is chosen from a halogen atom, a hydroxide, a hydrogen sulphate and a C_1 - C_6 alkyl sulphate.

30. At least one chemical according to Claim 23 chosen from:

- 3-[3-(3-amino-5-methylpyrazolo[1,5-a]pyrimidin-7-ylamino)propyl]-1-(2-hydroxyethyl)-3H-imidazol-1-ium chloride,
- 3-[(3-aminopyrazolo[1,5-a]pyrimidin-7-ylcarbamoyl)methyl]-1-methyl-3H-imidazol-1-ium chloride,

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- 3-(3-amino-7-hydroxy-5-methylpyrazolo[1,5-a]pyrimidin-6-ylmethyl)-1-methylpyridinium methyl sulphate,
 - 3-(3-amino-7-hydroxy-5-methylpyrazolo[1,5-a]pyrimidin-6-ylmethyl)-1-(2-hydroxyethyl)pyridinium chloride,
 - 2-[(3-aminopyrazolo[1,5-a]pyrimidin-7-ylamino)methyl]-1,3-dimethyl-3H-imidazol-1-ium methyl sulphate,
 - 3-[(3-aminopyrazolo[1,5-a]pyrimidin-7-ylamino)methyl]-1-methylpyridinium methyl sulphate,
 - 3-[(3-aminopyrazolo[1,5-a]pyrimidin-7-ylamino)methyl]-1-methylpyridinium methyl sulphate,
 - 2-(3,7-diamino-5-methylpyrazolo[1,5-a]pyrimidin-6-ylmethyl)-1,3-dimethyl-3H-imidazol-1-ium methyl sulphate,
 - 2-(3-amino-7-hydroxy-5-methylpyrazolo[1,5-a]pyrimidin-6-ylmethyl)-1,3-dimethyl-3H-imidazol-1-ium methyl sulphate,
 - 2-(3,7-diaminopyrazolo[1,5-a]pyrimidin-2-yl)-1-methylpyridinium methyl sulphate,
 - [3-(3-amino-5-methylpyrazolo[1,5-a]pyrimidin-7-ylamino)propyl]trimethylammonium chloride,
 - [3-(3-amino-5-methylpyrazolo[1,5-a]pyrimidin-7-ylamino)propyl]trimethylammonium methyl sulphate,
 - 1-[3-(3-amino-5-methylpyrazolo[1,5-a]pyrimidin-7-ylamino)propyl]-1-methylpiperidinium chloride,
 - 1-[3-(3-amino-5-methylpyrazolo[1,5-a]pyrimidin-7-ylamino)propyl]-1-methylpiperidinium methyl sulphate,

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- 4-[3-(3-amino-5-methyl pyrazolo[1,5-a]pyrimidin-7-ylamino)propyl]-4-methylmorpholin-4-ium chloride,

- 4-[3-(3-amino-5-methyl pyrazolo[1,5-a]pyrimidin-7-ylamino)propyl]-4-methylmorpholin-4-ium methyl sulphate,

and the acid-addition salts thereof.

31. At least one chemical according to Claim 30 chosen from:

- 3-[3-(3-amino-5-methyl pyrazolo[1,5-a]pyrimidin-7-ylamino)propyl]-1-(2-hydroxyethyl)-3H-imidazol-1-ium chloride,

- 3-(3-amino-7-hydroxy-5-methyl pyrazolo[1,5-a] pyrimidin-6-ylmethyl)-1-methylpyridinium methyl sulphate,

- 3-(3-amino-7-hydroxy-5-methylpyrazolo[1,5-a]pyrimidin-6-ylmethyl)-1-(2-hydroxyethyl)pyridinium chloride,

- 3-(3-amino-7-hydroxy-5-methylpyrazolo[1,5-a] pyrimidin-6-ylmethyl)-1-methylpyridinium chloride,

- 4-[3-(3-amino-5-methylpyrazolo[1,5-a]pyrimidin-7-ylamino)propyl]-4-methylmorpholin-4-ium chloride,

- 4-[3-(3-amino-5-methylpyrazolo[1,5-a]pyrimidin-7-ylamino)propyl]-4-methylmorpholin-4-ium methyl sulphate,

and the acid-addition salts thereof.

32. At least one chemical according to claim 23, wherein said acid-addition salts are chosen from hydrochlorides, hydrobromides, sulphates, citrates, succinates, tartrates, lactates and acetates.

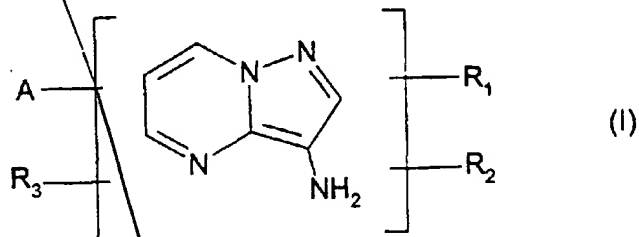
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33. At least one chemical according to claim 30, wherein said acid-addition salts are chosen from hydrochlorides, hydrobromides, sulphates, citrates, succinates, tartrates, lactates and acetates.

34. At least one chemical according to claim 31, wherein said acid-addition salts are chosen from hydrochlorides, hydrobromides, sulphates, citrates, succinates, tartrates, lactates and acetates

35. A composition for the oxidation dyeing of keratinous fibers, comprising, in a medium suitable for dyeing, at least one oxidation base chosen from compounds of formula (I) and acid addition salts thereof:



in which:

R_1 , R_2 and R_3 , which may be identical or different, are each chosen from a hydrogen atom; a halogen atom; a group Z; a (C₁-C₆ alkyl)carbonyl radical; an amino(C₁-C₆ alkyl)carbonyl radical; an N-Z-amino(C₁-C₆ alkyl)carbonyl radical; an N-(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical; an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical; an amino(C₁-C₆ alkyl)carbonyl(C₁-C₆ alkyl) radical; an N-Z-amino(C₁-C₆ alkyl)carbonyl(C₁-C₆ alkyl) radical; an N-(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl(C₁-C₆ alkyl) radical; an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl(C₁-C₆ alkyl) radical; a carboxyl radical; a (C₁-C₆ alkyl)carboxyl radical; a (C₁-C₆ alkyl)sulphonyl radical; an aminosulphonyl radical; an N-Z-aminosulphonyl radical; an

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N-(C₁-C₆ alkyl)aminosulphonyl radical; an N,N-di(C₁-C₆ alkyl)aminosulphonyl radical; an aminosulphonyl(C₁-C₆ alkyl) radical; an N-Z-aminosulphonyl(C₁-C₆ alkyl) radical; an N-(C₁-C₆ alkyl)aminosulphonyl(C₁-C₆ alkyl) radical; an N,N-di(C₁-C₆ alkyl)aminosulphonyl(C₁-C₆ alkyl) radical; a carbamyl radical; an N-(C₁-C₆ alkyl)carbamyl radical; an N,N-di(C₁-C₆ alkyl)carbamyl radical; a carbamyl(C₁-C₆ alkyl) radical; an N-(C₁-C₆ alkyl)carbamyl(C₁-C₆ alkyl) radical; an N,N-di(C₁-C₆ alkyl)carbamyl(C₁-C₆ alkyl) radical; a C₁-C₆ alkyl radical; a hydroxyl radical; a nitro radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; a C₁-C₆ trifluoroalkyl radical; a cyano radical; a group OR₆; a group SR₆; an amino radical; an N-(C₁-C₆ alkyl)amino radical; an N,N-di(C₁-C₆ alkyl)amino radical, wherein the two alkyl substituents may form a ring chosen from 5- and 6-membered rings; an N-hydroxy(C₁-C₆ alkyl)amino radical; an N,N-bis(hydroxy(C₁-C₆ alkyl))amino radical; an N-polyhydroxy(C₂-C₆ alkyl)amino radical; an N,N-bis(polyhydroxy(C₂-C₆ alkyl))amino radical; an amino(C₁-C₆ alkyl)amino radical, in which the terminal amino group is unsubstituted or substituted by one or two C₁-C₆ alkyl radicals, where the alkyl radicals may form a ring chosen from saturated and unsaturated 5- and 6-membered rings; an amino group protected by at least one group chosen from a (C₁-C₆ alkyl)carbonyl, a trifluoro(C₁-C₆ alkyl)carbonyl, an amino(C₁-C₆ alkyl)carbonyl, an N-Z-amino(C₁-C₆ alkyl)carbonyl, an N-(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl, an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical, an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl) formyl radical; and a group Z;

R₆ is chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a group Z; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; an aryl

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radical; a benzyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a C₁-C₆ aminosulphonylalkyl radical; a C₁-C₆ N-Z-aminosulphonylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)aminosulphonylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)aminosulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphanylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carbonylalkyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical whose amine is substituted by one or two radicals chosen from C₁-C₆ alkyl, monohydroxy(C₁-C₆ alkyl), polyhydroxy(C₂-C₆ alkyl), (C₁-C₆ alkyl)carbonyl, formyl, trifluoro(C₁-C₆ alkyl)carbonyl, and (C₁-C₆ alkyl)sulphonyl radicals, and a group Z;

A is chosen from -NR₄R₅ and a hydroxyl radical;

R₄ and R₅, are independently chosen from a hydrogen atom; a group Z; a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ thiocarbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a C₁-C₆ sulphoalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphanylalkyl radical; a C₁-C₆ aminosulphonylalkyl radical; a C₁-C₆ N-Z-aminosulphonylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)-aminosulphonylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)aminosulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carbonylalkyl radical; a C₁-C₆ aminoalkyl radical a C₁-C₆ aminoalkyl radical whose amine is substituted by one or two radicals chosen from C₁-C₆ alkyl, C₁-C₆

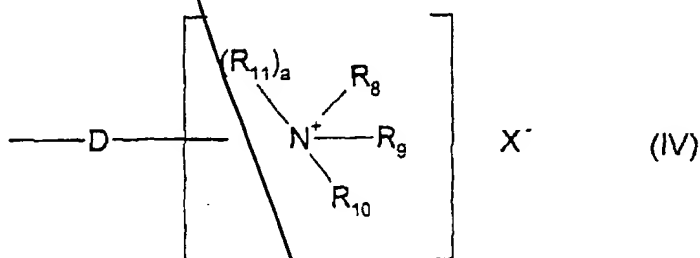
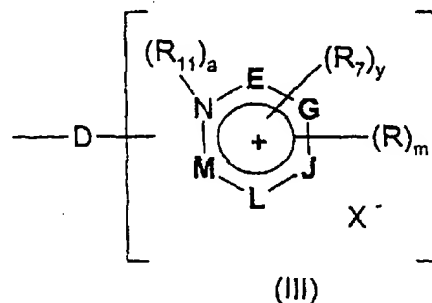
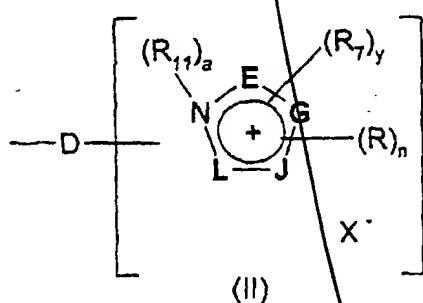
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monohydroxyalkyl, C₂-C₆ polyhydroxyalkyl, (C₁-C₆ alkyl)carbonyl, (C₁-alkyl)sulphonyl, formyl, and trifluoro(C₁-C₆ alkyl)carbonyl radicals, and a group Z;

wherein one and only one of the radicals R₄ and R₅ may also be chosen from a (C₁-C₆ alkyl)carbonyl radical; a formyl radical; a trifluoro(C₁-C₆ alkyl)carbonyl radical; an amino(C₁-C₆ alkyl)carbonyl radical; an N-Z-amino(C₁-C₆ alkyl)carbonyl radical; an N-(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical; and an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical;

Z is chosen from the unsaturated cationic groups of formulae (II) and (III) below and the saturated cationic groups of formula (IV) below:



in which:

D is a linker which is chosen from linear and branched alkyl chains and may be interrupted by at least one heteroatom atom and may be substituted by at least one of a hydroxyl and a C₁-C₆ alkoxy radical, and may carry at least one ketone function;

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the ring members E, G, J, L and M, which are identical or different, are chosen from carbon, oxygen, sulphur and nitrogen atoms;

n is an integer ranging from 0 to 4;

m is an integer ranging from 0 to 5;

the radicals R, which are identical or different, may be chosen from a group Z; a halogen atom; a hydroxyl radical; a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a nitro radical; a cyano radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ alkoxy radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; an amido radical; an aldehydo radical; a carboxyl radical; a C₁-C₆ alkylcarbonyl radical; a thio radical; a C₁-C₆ thioalkyl radical; a (C₁-C₆ alkyl)thio radical; an amino radical; an amino radical protected by a group chosen from (C₁-C₆ alkyl)carbonyl, carbamyl, and (C₁-C₆ alkyl)sulphonyl; and groups NHR" and NR"R" in which R" and R"', which are identical or different, are chosen from a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical and a C₂-C₆ polyhydroxyalkyl radical;

R₇ is chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; a carbamyl(C₁-C₆ alkyl) radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a benzyl radical; and a group Z;

R₈, R₉ and R₁₀, which are identical or different, are chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; a C₁-C₆ cyanoalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ amidoalkyl radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; and a C₁-C₆ aminoalkyl

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radical whose amine is protected by at least one of a (C₁-C₆ alkyl)carbonyl, amido, carboxyl and (C₁-C₆ alkyl)sulphonyl radical;

two of the radicals R₈, R₉ and R₁₀ may form, together with the nitrogen to which they are attached, a ring chosen from saturated 5- and 6-membered carbon-containing rings which may contain at least one heteroatom, wherein said rings may contain a substituent chosen from a halogen atom; a hydroxyl radical; a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a nitro radical; a cyano radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ alkoxy radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; an amido radical; an aldehydo radical; a carboxyl radical; a C₁-C₆ ketoalkyl radical; a thio radical; a C₁-C₆ thioalkyl radical; a (C₁-C₆ alkyl)thio radical; an amino radical; and an amino radical protected by a group chosen from (C₁-C₆ alkyl)carbonyl; carbamyl and (C₁-C₆ alkyl)sulphonyl radical;

one of the radicals R₈, R₉ and R₁₀ may be chosen from a second group Z, identical to or different from the first group Z;

R₁₁ may be chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical whose amine is protected by at least one of a (C₁-C₆ alkyl)carbonyl, a carbamyl, and a (C₁-C₆ alkyl)sulphonyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; a C₁-C₆ sulphonamidoalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphinylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)ketoalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)carbamylalkyl radical; and a C₁-C₆ N-(C₁-C₆ alkyl)sulphonamidoalkyl radical;

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a and y are integers equal to 0 or 1; with the following conditions:

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- in the unsaturated cationic groups of formula (II):
 - when $a = 0$, the linker D is attached to the nitrogen atom,
 - when $a = 1$, the linker D is attached to one of the ring members E, G, J or L,
 - y can adopt the value 1 only
 - 1) when the ring members E, G, J and L are simultaneously a carbon atom and when the radical R_7 is carried by the nitrogen atom of the unsaturated ring; or
 - 2) when at least one of the ring members E, G, J and L is C chosen from a nitrogen atom to which the radical R_7 is attached;
 - in the unsaturated cationic groups of formula (III):
 - when $a = 0$, the linker D is attached to the nitrogen atom,
 - when $a = 1$, the linker D is attached to one of the ring members E, G, J, L or M,
 - y can adopt the value 1 only
 - 1) when at least one of the ring members E, G, J, L and M is chosen from a divalent atom and
 - 2) when the radical R_7 is carried by the nitrogen atom of the unsaturated ring;
 - in the saturated cationic groups of formula (IV):
 - when $a = 0$, then the linker D is attached to the nitrogen atom which carries the radicals R_8 to R_{10} ,

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- when $a = 1$, then two of the radicals R_8 to R_{10} , together with the nitrogen atom to which they are attached, form a ring chosen from 5- and 6-membered saturated rings, and the linker D is carried by a carbon atom of the said ring;

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B3

X is chosen from monovalent and divalent anions;

with the proviso that the number of cationic groups Z in said compound of formula (I) is at least one.

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36. A composition according to Claim 35, wherein in said formulas (II), (III), and (IV), D is chosen from linear and branched alkyl chains having from 1 to 14 carbon atoms.

37. A composition according to Claim 35, wherein said alkyl chains are interrupted by at least one heteroatom chosen from oxygen, sulphur, and nitrogen atoms.

38. A composition according to Claim 35, wherein the rings of the unsaturated group Z of formula (II) are chosen from pyrrole, imidazole, pyrazole, oxazole, thiazole and triazole rings.

39. A composition according to Claim 35, wherein the rings of the unsaturated group Z of formula (III) are chosen from pyridine, pyrimidine, pyrazine, oxazine and triazine rings.

40. A composition according to Claim 35, wherein two of the radicals R_8 , R_9 and R_{10} in said saturated group Z of formula (IV) form a ring chosen from a pyrrolidine ring, a piperidine ring, a piperazine ring and a morpholine ring.

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41. A composition according to Claim 35, wherein X^- is chosen from a halogen atom, a hydroxide, a hydrogen sulphate and a C_1-C_6 alkyl sulphate

42. A composition according to Claim 35, wherein said at least one compound of formula (I) is present in said composition in an amount ranging from 0.0005 to 12% by weight relative to the total weight of the composition.

43. A composition according to Claim 42, wherein said at least one compound of formula (I) is present in said composition in an amount ranging from 0.005 to 6% by weight relative to the total weight of the dyeing composition.

44. A composition according to Claim 35, further comprising at least one additional oxidation base chosen from para-phenylenediamines, bisphenylalkylenediamines, para-aminophenols, ortho-aminophenols and heterocyclic bases other than the compounds of formula (I).

45. A composition according to Claim 44, wherein the at least one additional oxidation base is present in said composition in an amount ranging from 0.0005 to 12% by weight relative to the total weight of the dyeing composition.

46. A composition according to Claim 35, further comprising at least one of couplers and direct dyes.

47. A composition according to Claim 46, wherein said couplers are chosen from meta-phenylenediamines, meta-aminophenols and metadiaphenols and heterocyclic couplers, and the acid-addition salts thereof.

48. A composition according to Claim 47, wherein said couplers are chosen from 2-methyl-5-aminophenol, 5-N-(β -hydroxyethyl)amino-2-methylphenol, 3-aminophenol, 1,3-dihydroxybenzene, 1,3-dihydroxy-2-methylbenzene, 4-chloro-1,3-

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dihydroxybenzene, 2,4-diamino-1-(β -hydroxyethyloxy)benzene, 2-amino-4-(β -hydroxyethylamino)-1-methoxybenzene, 1,3-diaminobenzene, 1,3-bis(2,4-diaminophenoxy)propane, sesamol, α -naphthol, 6-hydroxyindole, 4-hydroxyindole, 4-hydroxy-N-methylindole, 6-hydroxyindoline, 2,6-dihydroxy-4-methylpyridine, 1 H-3-methylpyrazol-5-one, 1-phenyl-3-methylpyrazol-5-one, and the acid-addition salts thereof.

49. A composition according to Claim 46, wherein at least one coupler is present in said composition in an amount ranging from 0.0001 to 10% by weight relative to the total weight of the composition.

50. A composition according to Claim 47, wherein the acid-addition salts are chosen from the hydrochlorides, hydrobromides, sulphates, citrates, succinates, tartrates, lactates and acetates.

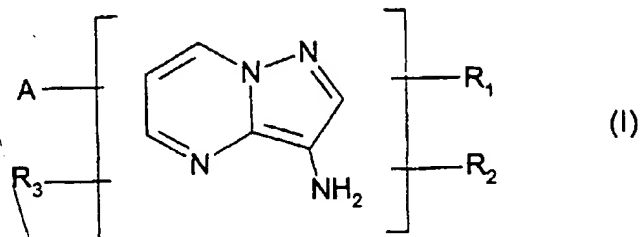
51. A composition according to Claim 48, wherein the acid-addition salts are chosen from the hydrochlorides, hydrobromides, sulphates, citrates, succinates, tartrates, lactates and acetates.

52. A method for dyeing keratinous fibers comprising
applying a dyeing composition to said keratinous fibers, and
developing color with the aid of at least one oxidizing agent,
wherein said at least one oxidizing agent is added to the dyeing composition at the time of application or which is present in an oxidizing composition which is applied simultaneously with said dyeing composition, either sequentially or separately,
wherein said dyeing composition comprises, in a medium suitable for dyeing,

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at least one oxidation base chosen from compounds of formula (I) and acid addition salts thereof:



in which:

R₁, R₂ and R₃, which may be identical or different, are each chosen from a hydrogen atom; a halogen atom; a group Z; a (C₁-C₆ alkyl)carbonyl radical; an amino(C₁-C₆ alkyl)carbonyl radical; an N-Z-amino(C₁-C₆ alkyl)carbonyl radical; an N-(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical; an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical; an amino(C₁-C₆ alkyl)carbonyl(C₁-C₆ alkyl) radical; an N-Z-amino(C₁-C₆ alkyl)carbonyl(C₁-C₆ alkyl) radical; an N-(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl(C₁-C₆ alkyl) radical; an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl(C₁-C₆ alkyl) radical; a carboxyl radical; a (C₁-C₆ alkyl)carboxyl radical; a (C₁-C₆ alkyl)sulphonyl radical; an aminosulphonyl radical; an N-Z-aminosulphonyl radical; an N-(C₁-C₆ alkyl)aminosulphonyl radical; an N,N-di(C₁-C₆ alkyl)aminosulphonyl radical; an aminosulphonyl(C₁-C₆ alkyl) radical; an N-Z-aminosulphonyl(C₁-C₆ alkyl) radical; an N-(C₁-C₆ alkyl)aminosulphonyl(C₁-C₆ alkyl) radical; an N,N-di(C₁-C₆ alkyl)aminosulphonyl(C₁-C₆ alkyl) radical; a carbamyl radical; an N-(C₁-C₆ alkyl)carbamyl radical; an N,N-di(C₁-C₆ alkyl)carbamyl radical; a carbamyl(C₁-C₆ alkyl) radical; an N-(C₁-C₆ alkyl)carbamyl(C₁-C₆ alkyl) radical; an N,N-di(C₁-C₆ alkyl)carbamyl(C₁-C₆ alkyl) radical; a C₁-C₆ alkyl radical; a hydroxyl radical; a nitro

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radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; a C₁-C₆ trifluoroalkyl radical; a cyano radical; a group OR₆; a group SR₆; an amino radical; an N-(C₁-C₆ alkyl)amino radical; an N,N-di(C₁-C₆ alkyl)amino radical, wherein the two alkyl substituents may form a ring chosen from 5- and 6-membered rings; an N-hydroxy(C₁-C₆ alkyl)amino radical; an N,N-bis(hydroxy(C₁-C₆ alkyl))amino radical; an N-polyhydroxy(C₂-C₆ alkyl)amino radical; an N,N-bis(polyhydroxy(C₂-C₆ alkyl))amino radical; an amino(C₁-C₆ alkyl)amino radical, in which the terminal amino group is unsubstituted or substituted by one or two C₁-C₆ alkyl radicals, where the alkyl radicals may form a ring chosen from saturated and unsaturated 5- and 6-membered rings; an amino group protected by at least one group chosen from a (C₁-C₆ alkyl)carbonyl, a trifluoro(C₁-C₆ alkyl)carbonyl, an amino(C₁-C₆ alkyl)carbonyl, an N-Z-amino(C₁-C₆ alkyl)carbonyl, an N-(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl, an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical, an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl) formyl radical; and a group Z;

R₆ is chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a group Z; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a C₁-C₆ aminosulphonylalkyl radical; a C₁-C₆ N-Z-aminosulphonylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)aminosulphonylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)aminosulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphinyllalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carbonylalkyl radical; a C₁-C₆

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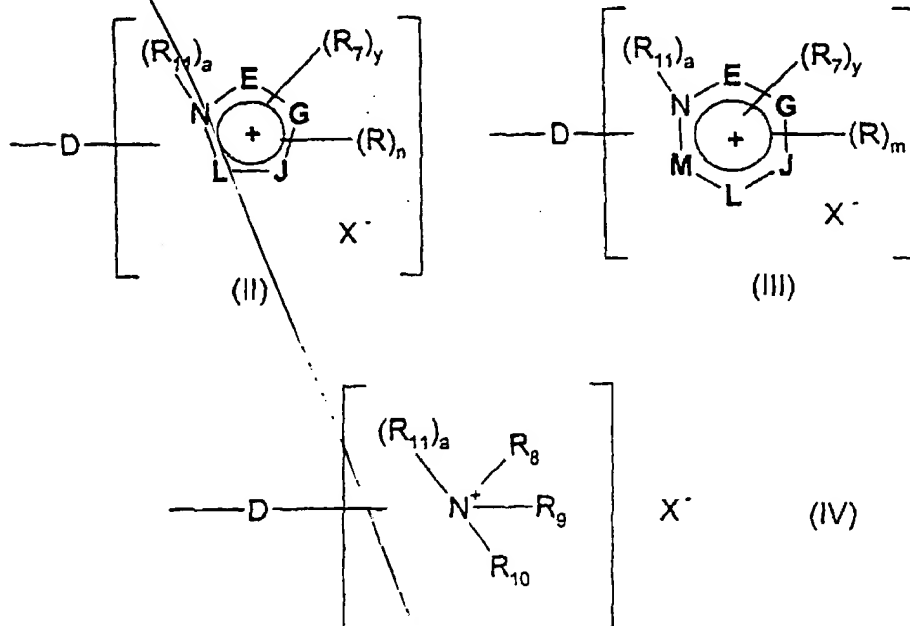
aminoalkyl radical; a C₁-C₆ aminoalkyl radical whose amine is substituted by one or two radicals chosen from C₁-C₆ alkyl, monohydroxy(C₁-C₆ alkyl), polyhydroxy(C₂-C₆ alkyl), (C₁-C₆ alkyl)carbonyl, formyl, trifluoro(C₁-C₆ alkyl)carbonyl, and (C₁-C₆ alkyl)sulphonyl radicals, and a group Z;

A is chosen from -NR₄R₅ and a hydroxyl radical;

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R₄ and R₅, are independently chosen from a hydrogen atom; a group Z; a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ thiocarbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a C₁-C₆ sulphaalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphinylalkyl radical; a C₁-C₆ aminosulphonylalkyl radical; a C₁-C₆ N-Z-aminosulphonylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)-aminosulphonylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)aminosulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carbonylalkyl radical; a C₁-C₆ aminoalkyl radical a C₁-C₆ aminoalkyl radical whose amine is substituted by one or two radicals chosen from C₁-C₆ alkyl, C₁-C₆ monohydroxyalkyl, C₂-C₆ polyhydroxyalkyl, (C₁-C₆ alkyl)carbonyl, (C₁-alkyl)sulphonyl, formyl, and trifluoro(C₁-C₆ alkyl)carbonyl radicals, and a group Z;

wherein one and only one of the radicals R₄ and R₅ may also be chosen from a (C₁-C₆ alkyl)carbonyl radical; a formyl radical; a trifluoro(C₁-C₆ alkyl)carbonyl radical; an amino(C₁-C₆ alkyl)carbonyl radical; an N-Z-amino(C₁-C₆ alkyl)carbonyl radical; an N-(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical; and an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical;

Z is chosen from the unsaturated cationic groups of formulae (II) and (III) below and the saturated cationic groups of formula (IV) below:



in which:

D is a linker which is chosen from linear and branched alkyl chains and may be interrupted by at least one heteroatom atom and may be substituted by at least one of a hydroxyl and a C₁-C₆ alkoxy radical, and may carry at least one ketone function;

the ring members E, G, J, L and M, which are identical or different, are chosen from carbon, oxygen, sulphur and nitrogen atoms;

n is an integer ranging from 0 to 4;

m is an integer ranging from 0 to 5;

the radicals R, which are identical or different, may be chosen from a group Z; a halogen atom; a hydroxyl radical; a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a nitro radical; a cyano radical; a C₁-C₆

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A) cyanoalkyl radical; a C₁-C₆ alkoxy radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; an amido radical; an aldehydo radical; a carboxyl radical; a C₁-C₆ alkylcarbonyl radical; a thio radical; a C₁-C₆ thioalkyl radical; a (C₁-C₆ alkyl)thio radical; an amino radical; an amino radical protected by a group chosen from (C₁-C₆ alkyl)carbonyl, carbamyl, and (C₁-C₆ alkyl)sulphonyl; and groups NHR" and NR"R'" in which R" and R'", which are identical or different, are chosen from a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical and a C₂-C₆ polyhydroxyalkyl radical;

R₇ is chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; a carbamyl(C₁-C₆ alkyl) radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a benzyl radical; and a group Z;

R₈, R₉ and R₁₀, which are identical or different, are chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; a C₁-C₆ cyanoalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ amidoalkyl radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; and a C₁-C₆ aminoalkyl radical whose amine is protected by at least one of a (C₁-C₆ alkyl)carbonyl, amido, carboxyl and (C₁-C₆ alkyl)sulphonyl radical;

two of the radicals R₈, R₉ and R₁₀ may form, together with the nitrogen to which they are attached, a ring chosen from saturated 5- and 6-membered carbon-containing rings which may contain at least one heteroatom, wherein said rings may contain a substituent chosen from a halogen atom; a hydroxyl radical; a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a nitro radical; a cyano radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ alkoxy radical; a C₁-C₆ tri(C₁-C₆

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alkyl)silanealkyl radical; an amido radical; an aldehydo radical; a carboxyl radical; a C₁-C₆ ketoalkyl radical; a thio radical; a C₁-C₆ thioalkyl radical; a (C₁-C₆ alkyl)thio radical; an amino radical; and an amino radical protected by a group chosen from (C₁-C₆ alkyl)carbonyl; carbamyl and (C₁-C₆ alkyl)sulphonyl radical;

one of the radicals R₈, R₉ and R₁₀ may be chosen from a second group Z, identical to or different from the first group Z;

A) R₁₁ may be chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical whose amine is protected by at least one of a (C₁-C₆ alkyl)carbonyl, a carbamyl, and a (C₁-C₆ alkyl)sulphonyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; a C₁-C₆ sulphonamidoalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphinyalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)ketoalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)carbamylalkyl radical; and a C₁-C₆ N-(C₁-C₆ alkyl)sulphonamidoalkyl radical;

a and y are integers equal to 0 or 1; with the following conditions:

- in the unsaturated cationic groups of formula (II):
 - when a = 0, the linker D is attached to the nitrogen atom,
 - when a = 1, the linker D is attached to one of the ring members E, G, J or L,
 - y can adopt the value 1 only

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- A)
- 1) when the ring members E, G, J and L are simultaneously a carbon atom and when the radical R_7 is carried by the nitrogen atom of the unsaturated ring; or
 - 2) when at least one of the ring members E, G, J and L is C chosen from a nitrogen atom to which the radical R_7 is attached;
- in the unsaturated cationic groups of formula (III):
- when $a = 0$, the linker D is attached to the nitrogen atom,
 - when $a = 1$, the linker D is attached to one of the ring members E, G, J, L or M,
 - y can adopt the value 1 only
 - 1) when at least one of the ring members E, G, J, L and M is chosen from a divalent atom and
 - 2) when the radical R_7 is carried by the nitrogen atom of the unsaturated ring;
- in the saturated cationic groups of formula (IV):
- when $a = 0$, then the linker D is attached to the nitrogen atom which carries the radicals R_8 to R_{10} ,
 - when $a = 1$, then two of the radicals R_8 to R_{10} , together with the nitrogen atom to which they are attached, form a ring chosen from 5- and 6-membered saturated rings, and the linker D is carried by a carbon atom of the said ring;

X^- is chosen from monovalent and divalent anions;

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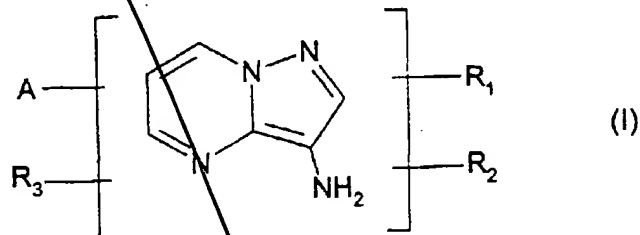
with the proviso that the number of cationic groups Z in said compound of formula (I) is at least one.

53. The method according to Claim 52, wherein the at least one oxidizing agent is chosen from hydrogen peroxide, urea peroxide, alkali metal bromates, persalts and enzymes.

54. The method of Claim 52, wherein said keratinous fibers are hair.

55. A multi-compartment dyeing kit comprising at least two compartments, wherein a first compartment contains a dyeing composition and a second compartment contains an oxidizing composition,

wherein said dyeing composition comprises, in a medium suitable for dyeing, at least one oxidation base chosen from compounds of formula (I) and acid addition salts thereof:



in which:

R₁, R₂ and R₃, which may be identical or different, are each chosen from a hydrogen atom; a halogen atom; a group Z; a (C₁-C₆ alkyl)carbonyl radical; an amino(C₁-C₆ alkyl)carbonyl radical; an N-Z-amino(C₁-C₆ alkyl)carbonyl radical; an N-(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical; an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical; an amino(C₁-C₆ alkyl)carbonyl(C₁-C₆ alkyl) radical; an N-Z-amino(C₁-C₆ alkyl)carbonyl(C₁-C₆ alkyl) radical; an N-(C₁-C₆ alkyl)amino(C₁-C₆

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alkyl)carbonyl(C₁-C₆ alkyl) radical; an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl(C₁-C₆ alkyl) radical; a carboxyl radical; a (C₁-C₆ alkyl)carboxyl radical; a (C₁-C₆ alkyl)sulphonyl radical; an aminosulphonyl radical; an N-Z-aminosulphonyl radical; an N-(C₁-C₆ alkyl)aminosulphonyl radical; an N,N-di(C₁-C₆ alkyl)aminosulphonyl radical; an aminosulphonyl(C₁-C₆ alkyl) radical; an N-Z-aminosulphonyl(C₁-C₆ alkyl) radical; an N-(C₁-C₆ alkyl)aminosulphonyl(C₁-C₆ alkyl) radical; an N,N-di(C₁-C₆ alkyl)aminosulphonyl(C₁-C₆ alkyl) radical; a carbamyl radical; an N-(C₁-C₆ alkyl)carbamyl radical; an N,N-di(C₁-C₆ alkyl)carbamyl radical; a carbamyl(C₁-C₆ alkyl) radical; an N-(C₁-C₆ alkyl)carbamyl(C₁-C₆ alkyl) radical; an N,N-di(C₁-C₆ alkyl)carbamyl(C₁-C₆ alkyl) radical; a C₁-C₆ alkyl radical; a hydroxyl radical; a nitro radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; a C₁-C₆ trifluoroalkyl radical; a cyano radical; a group OR₆; a group SR₆; an amino radical; an N-(C₁-C₆ alkyl)amino radical; an N,N-di(C₁-C₆ alkyl)amino radical, wherein the two alkyl substituents may form a ring chosen from 5- and 6-membered rings; an N-hydroxy(C₁-C₆ alkyl)amino radical; an N,N-bis(hydroxy(C₁-C₆ alkyl))amino radical; an N-polyhydroxy(C₂-C₆ alkyl)amino radical; an N,N-bis(polyhydroxy(C₂-C₆ alkyl))amino radical; an amino(C₁-C₆ alkyl)amino radical, in which the terminal amino group is unsubstituted or substituted by one or two C₁-C₆ alkyl radicals, where the alkyl radicals may form a ring chosen from saturated and unsaturated 5- and 6-membered rings; an amino group protected by at least one group chosen from a (C₁-C₆ alkyl)carbonyl, a trifluoro(C₁-C₆ alkyl)carbonyl, an amino(C₁-C₆ alkyl)carbonyl, an N-Z-amino(C₁-C₆ alkyl)carbonyl, an N-(C₁-C₆ alkyl)amino(C₁-C₆

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alkyl)carbonyl, an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical, an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl) formyl radical; and a group Z;

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R₆ is chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a group Z; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a C₁-C₆ aminosulphonylalkyl radical; a C₁-C₆ N-Z-aminosulphonylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)aminosulphonylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)aminosulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphanylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carbonylalkyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical whose amine is substituted by one or two radicals chosen from C₁-C₆ alkyl, monohydroxy(C₁-C₆ alkyl), polyhydroxy(C₂-C₆ alkyl), (C₁-C₆ alkyl)carbonyl, formyl, trifluoro(C₁-C₆ alkyl)carbonyl, and (C₁-C₆ alkyl)sulphonyl radicals, and a group Z;

A is chosen from -NR₄R₅ and a hydroxyl radical;

R₄ and R₅, are independently chosen from a hydrogen atom; a group Z; a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)carbamylalkyl radical; a C₁-C₆ thiocarbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a C₁-C₆ sulphaalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphanylalkyl radical; a C₁-C₆ aminosulphonylalkyl radical; a

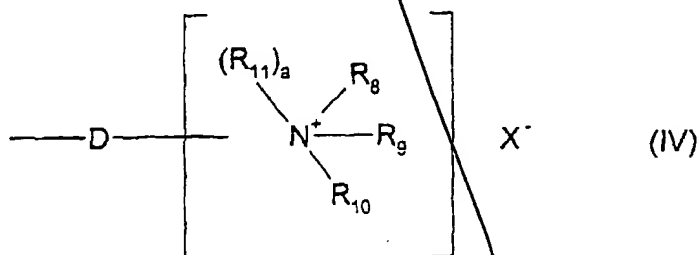
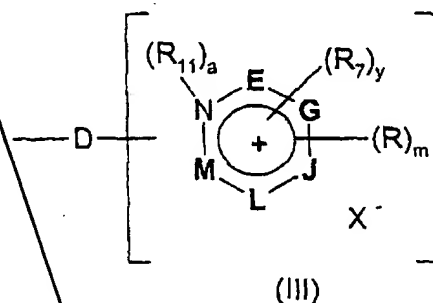
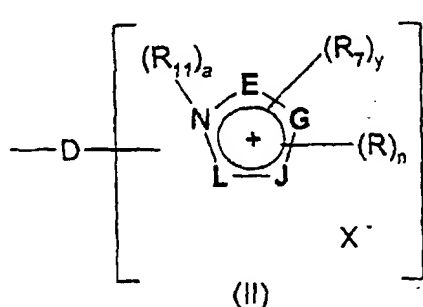
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C₁-C₆ N-Z-aminosulphonylalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)-aminosulphonylalkyl radical; a C₁-C₆ N,N-di(C₁-C₆ alkyl)aminosulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carbonylalkyl radical; a C₁-C₆ aminoalkyl radical a C₁-C₆ aminoalkyl radical whose amine is substituted by one or two radicals chosen from C₁-C₆ alkyl, C₁-C₆ monohydroxyalkyl, C₂-C₆ polyhydroxyalkyl, (C₁-C₆ alkyl)carbonyl, (C₁-alkyl)sulphonyl, formyl, and trifluoro(C₁-C₆ alkyl)carbonyl radicals, and a group Z;

wherein one and only one of the radicals R₄ and R₅ may also be chosen from a (C₁-C₆ alkyl)carbonyl radical; a formyl radical; a trifluoro(C₁-C₆ alkyl)carbonyl radical; an amino(C₁-C₆ alkyl)carbonyl radical; an N-Z-amino(C₁-C₆ alkyl)carbonyl radical; an N-(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical; and an N,N-di(C₁-C₆ alkyl)amino(C₁-C₆ alkyl)carbonyl radical;

Z is chosen from the unsaturated cationic groups of formulae (II) and (III) below and the saturated cationic groups of formula (IV) below:



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in which:

D is a linker which is chosen from linear and branched alkyl chains and may be interrupted by at least one heteroatom atom and may be substituted by at least one of a hydroxyl and a C₁-C₆ alkoxy radical, and may carry at least one ketone function;

the ring members E, G, J, L and M, which are identical or different, are chosen from carbon, oxygen, sulphur and nitrogen atoms;

n is an integer ranging from 0 to 4;

m is an integer ranging from 0 to 5;

the radicals R, which are identical or different, may be chosen from a group Z; a halogen atom; a hydroxyl radical; a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a nitro radical; a cyano radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ alkoxy radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; an amido radical; an aldehydo radical; a carboxyl radical; a C₁-C₆ alkylcarbonyl radical; a thio radical; a C₁-C₆ thioalkyl radical; a (C₁-C₆ alkyl)thio radical; an amino radical; an amino radical protected by a group chosen from (C₁-C₆ alkyl)carbonyl, carbamyl, and (C₁-C₆ alkyl)sulphonyl; and groups NHR'' and NR''R''' in which R'' and R''', which are identical or different, are chosen from a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical and a C₂-C₆ polyhydroxyalkyl radical;

R₇ is chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; a carbamyl(C₁-C₆ alkyl) radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a benzyl radical; and a group Z;

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R₈, R₉ and R₁₀, which are identical or different, are chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ (C₁-C₆ alkoxy)alkyl radical; a C₁-C₆ cyanoalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ amidoalkyl radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; and a C₁-C₆ aminoalkyl radical whose amine is protected by at least one of a (C₁-C₆ alkyl)carbonyl, amido, carboxyl and (C₁-C₆ alkyl)sulphonyl radical;

two of the radicals R₈, R₉ and R₁₀ may form, together with the nitrogen to which they are attached, a ring chosen from saturated 5- and 6-membered carbon-containing rings which may contain at least one heteroatom, wherein said rings may contain a substituent chosen from a halogen atom; a hydroxyl radical; a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a nitro radical; a cyano radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ alkoxy radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; an amido radical; an aldehydo radical; a carboxyl radical; a C₁-C₆ ketoalkyl radical; a thio radical; a C₁-C₆ thioalkyl radical; a (C₁-C₆ alkyl)thio radical; an amino radical; and an amino radical protected by a group chosen from (C₁-C₆ alkyl)carbonyl; carbamyl and (C₁-C₆ alkyl)sulphonyl radical;

one of the radicals R₈, R₉ and R₁₀ may be chosen from a second group Z, identical to or different from the first group Z;

R₁₁ may be chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical whose amine is protected by at least one of a (C₁-C₆ alkyl)carbonyl, a carbamyl, and a (C₁-C₆ alkyl)sulphonyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ cyanoalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ trifluoroalkyl

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radical; a C₁-C₆ tri(C₁-C₆ alkyl)silanealkyl radical; a C₁-C₆ sulphonamidoalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)carboxyalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphinyalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)sulphonylalkyl radical; a C₁-C₆ (C₁-C₆ alkyl)ketoalkyl radical; a C₁-C₆ N-(C₁-C₆ alkyl)carbamyalkyl radical; and a C₁-C₆ N-(C₁-C₆ alkyl)sulphonamidoalkyl radical;

a and y are integers equal to 0 or 1; with the following conditions:

- A1
- in the unsaturated cationic groups of formula (II):
 - when a = 0, the linker D is attached to the nitrogen atom,
 - when a = 1, the linker D is attached to one of the ring members E, G, J or L,
 - y can adopt the value 1 only
 - 1) when the ring members E, G, J and L are simultaneously a carbon atom and when the radical R₇ is carried by the nitrogen atom of the unsaturated ring; or
 - 2) when at least one of the ring members E, G, J and L is C chosen from a nitrogen atom to which the radical R₇ is attached;
 - in the unsaturated cationic groups of formula (III):
 - when a = 0, the linker D is attached to the nitrogen atom,
 - when a = 1, the linker D is attached to one of the ring members E, G, J, L or M,
 - y can adopt the value 1 only
 - 1) when at least one of the ring members E, G, J, L and M is chosen from a divalent atom and

2) when the radical R_7 is carried by the nitrogen atom of the unsaturated ring;

- in the saturated cationic groups of formula (IV):
- when $a = 0$, then the linker D is attached to the nitrogen atom which carries the radicals R_8 to R_{10} ,
 - when $a = 1$, then two of the radicals R_8 to R_{10} , together with the nitrogen atom to which they are attached, form a ring chosen from 5- and 6-membered saturated rings, and the linker D is carried by a carbon atom of the said ring;

X^- is chosen from monovalent and divalent anions;

with the proviso that the number of cationic groups Z in said compound of formula (I) is at least one.

REMARKS

Claims 1-22 have been replaced by new claims 23-55. Support for the new claims can be found in the specification and claims as originally filed. Accordingly, no new matter has been added.

Applicants now await an action on the merits of this application.

If there is any fee due in connection with the filing of this Preliminary Amendment, please charge the fee to our Deposit Account No. 06-0916.